

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	GILREATH, MARK	Examiner:	SHAY, DAVID M.
Serial No.:	10/531,692	Group Art Unit:	3769
Filed:	April 18, 2005	Confirmation No.:	1399
Title:	INTUBATION AND IMAGING DEVICE AND SYSTEM		

DECLARATION OF RACHEL BENTOV UNDER 37 C.F.R. § 1.132

1. I was born in 1965 in Boston, Massachusetts.
2. In 1989, I was awarded the degree of Bachelors of Science in Biology from Tel Aviv University, in Tel Aviv, Israel. In 1995, I was awarded the degree of Masters of Science in Biochemistry from Hebrew University, in Jerusalem, Israel.
3. From 1998 through 2000, I was employed by Eitan, Pearl, Latzer & Cohen-Zedek (EPLCZ). During my employment at EPLCZ, I was outside counsel to Given Imaging Ltd. ("Given Imaging") of Yoqneam, Israel on many of its intellectual property matters.
4. From January 2001 until April 2002, I was self employed, during which time I was an outside contractor for EPLCZ and served as outside counsel to Given Imaging through EPLCZ.
5. From April 2002 until early November 2008, I was employed by Given Imaging and, at the time of my voluntary departure in November 2008, held the title Director of Intellectual Property.
6. I am informed that the above-identified application, which is owned by Given Imaging by way of an assignment from the inventor thereof as recorded at the U.S. Patent and Trademark Office ("USPTO") on April 18, 2005 at Reel 017122, Frame 0190, was filed in the USPTO on April 18, 2005 as a national phase application under 35 U.S.C. § 371 of International Patent Application No. PCT/IL2003/000853, which was filed on October 21, 2003 and claimed the benefit of U.S. Provisional Patent Application No. 60/419,558, filed October 21, 2002.

APPLICANT(S): GILREATH, Mark
SERIAL NO.: 10/531,692
FILED: April 18, 2005
Page 2

7. I am informed that the USPTO issued an Office Action on October 20, 2009 wherein the Examiner rejected all of pending claims 1-20 under 35 U.S.C. § 102(e) as being anticipated by Mazzei et al. (U.S. Patent No. 6,840,903 or U.S. Patent Application Publ. No. 2003/0181789).

8. I am informed that Mazzei et al., upon which all the rejections depend, was first published under U.S. Patent Appl. Publication No. 2003/0181789 on September 25, 2003, which is after the earliest claimed priority date of Applicants' application, October 21, 2002, but is available as a reference against this application under 35 U.S.C. § 102(e) because Mazzei et al. was filed in the USPTO on March 21, 2002, which is prior to October 21, 2002.

9. I submit this declaration on behalf of Given Imaging under 37 C.F.R. § 1.132 in support of a Response to Office Action and a Declaration of Mark Gilreath Under 37 C.F.R. § 1.131 to show that the subject matter of the pending claims of this application was conceived of by the inventors hereof prior to March 21, 2002 and to show that the Applicant was diligent until filing of a provisional application on October 21, 2002.

10. As part of my responsibilities as outside counsel to Given Imaging through EPLCZ, I prepared and assisted in the preparation of patent applications for Given Imaging. Prior to my being hired by Given Imaging as patent counsel, Given Imaging had not had an in-house patent counsel and did not have a database of documents relating to patent applications filed on its behalf. As a result, I kept all the patent files relating to patent applications filed by EPLCZ on behalf of Given Imaging on my personal computer. When I joined Given Imaging in April 2002, I copied all those files onto the Given Imaging computer system. In order to preserve the integrity of the documents that I copied from my computer, I made it a practice not to modify and save any of those documents except as new documents. Accordingly, virtually all documents that were copied from my personal computer now exist on the Given Imaging computer database in their original form with the exact same file names and last modification dates as those documents had on my personal computer.

11. With regard to the above-identified application, I recall that the inventor (Mark Gilreath), other individuals from Given Imaging and attorneys at EPLCZ, including myself, held a meeting in Israel in late 2001 wherein the conception and embodiments of this invention and other inventions were discussed. Subsequent to the meeting in late 2001, based

APPLICANT(S): GILREATH, Mark
SERIAL NO.: 10/531,692
FILED: April 18, 2005
Page 3

upon disclosure from the inventor, I personally and directly participated in the preparation and revision of a provisional patent application for Given Imaging concerning the invention that is the subject of this patent application.

12. Attached hereto as Exhibit A is a copy of a snapshot of the directory from my "old documents" directory at Given Imaging relating to this patent application, showing successive versions of this draft application that were saved on my personal computer in the electronic file folder for that invention. This directory shows documents relating to this patent application entitled "intubation" that were copied from my personal computer at the time that I joined Given Imaging, all of which have the exact same file names as those documents I had on my computer, which indicates that these documents have been unmodified since they were copied from my computer. This directory shows draft patent applications on this subject matter beginning February 2002 and continuing through May 2002. Specifically, the directory shows a draft patent application named "intubation-draft1.doc" saved on February 17, 2002; a draft patent application named "intubation-draft1with comments.doc" saved on February 18, 2002; a draft patent application named "intubation3.doc" saved on April 15, 2002; a draft patent application named "intubation3rbcomment.doc" saved on April 17, 2002; a draft patent application named "intubation3CPI.doc" saved on April 21, 2002; a draft patent application named "intubation6.doc" saved on May 5, 2002; and a draft patent application named "intubation6rb.doc" saved on May 9, 2002.

13. Attached hereto as Exhibit B is a printed-out copy of the first saved draft patent application for this invention, named "intubation-draft1.doc", which was saved on February 17, 2002 in the directory referred to above. This draft application was the first of at least seven (7) successive draft patent applications concerning this invention, as set forth above. Exhibit A, the directory from my "old documents" directory at Given Imaging, does not reflect any later drafts subsequent to May 9, 2002 most likely because I was, by that time, already employed by Given Imaging. However, I believe that, subsequent to the time that I joined Given Imaging, I prepared and the inventor reviewed additional draft patent applications that were not saved on this separate directory.

APPLICANT(S): GILREATH, Mark
SERIAL NO.: 10/531,692
FILED: April 18, 2005
Page 4

14. It is important to state that the time period within 2002, including during the period between March 21, 2002 and October 21, 2002, was extremely busy for me as the sole in-house patent attorney for the assignee Given Imaging. Attached hereto as Exhibit C is a list of patent applications that were filed on behalf of Given Imaging during 2002, which shows that between January 1, 2002 and December 30, 2002, we prepared and filed 130 separate patent applications on behalf of Given Imaging. Of these 130 applications, 62 applications were United States patent applications, almost all of which were new U.S. applications based upon original disclosures, and the rest of which were continuations, continuations-in-part, divisionals or foreign filings based upon previously-filed applications. Specifically, during the seven month period between March 21, 2002 and October 21, 2002, aside from the provisional application upon which this application is based, we filed on behalf of Given Imaging 81 patent applications, of which 34 were new U.S. applications based upon original disclosures, and of which 47 were continuations, continuations-in-part, divisionals or foreign filings based upon previously-filed applications.

15. As shown in Exhibit C, this application was not the only application on which I was working on drafting and filing during the period between March 21, 2002 and October 21, 2002. During this time period, I was diligently and expeditiously working on many other unrelated patent applications, which caused there to be a significant backlog of applications. It is this heavy workload that significantly contributed to the fact that U.S. Provisional Application No. 60/419,558 was not filed until October 21, 2002.

I declare under penalty of perjury that all statements made herein are based upon my own knowledge and believed to be true. I understand that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. § 1001), and may jeopardize the validity of any patent that may be issued from the above-identified patent application.

Rachel Bentov
Rachel Bentov

Date: August 20, 2010

Name	Size	Type	Date Modified
P-4438-4.doc	1 KB	Microsoft Word Doc...	1/7/2002 6:47 AM
P-2617usamend.doc	65 KB	Microsoft Word Doc...	4/30/2002 6:13 AM
P-2618US1(4256).doc	98 KB	Microsoft Word Doc...	11/26/2001 6:14 PM
P-2752figures.pdf	18 KB	Adobe Acrobat 7.0 ...	1/16/2002 6:34 AM
P-2752pc.doc	64 KB	Microsoft Word Doc...	1/16/2002 6:34 AM
P-3228figures.pdf	82 KB	Adobe Acrobat 7.0 ...	1/16/2002 6:55 AM
P-3228pc.doc	71 KB	Microsoft Word Doc...	1/16/2002 6:34 AM
P-3839pct.doc	51 KB	Microsoft Word Doc...	3/26/2002 5:13 AM
P-3839us.doc	50 KB	Microsoft Word Doc...	3/26/2002 5:07 AM
P-4018us.doc	40 KB	Microsoft Word Doc...	4/3/2002 10:13 PM
P-4438rb.doc	87 KB	Microsoft Word Doc...	1/8/2002 8:17 AM
P-4438vark.doc	82 KB	Microsoft Word Doc...	1/7/2002 8:02 AM
P-4452usp.doc	36 KB	Microsoft Word Doc...	2/11/2002 7:25 AM
P-4529USPmagnet.doc	65 KB	Microsoft Word Doc...	1/14/2002 4:54 AM
P-amend4438pc.doc	28 KB	Microsoft Word Doc...	1/15/2002 6:52 AM
P-Caleb comments II -draft4.doc	68 KB	Microsoft Word Doc...	12/6/2001 3:23 AM
P-Caleb Comments P4438-1.doc	59 KB	Microsoft Word Doc...	12/4/2001 2:10 AM
P-Caleb+RB Comments P4438-1.doc	69 KB	Microsoft Word Doc...	12/4/2001 4:45 AM
P-calmresp.doc	22 KB	Microsoft Word Doc...	1/15/2002 4:38 PM
P-CProComments3839usp.doc	67 KB	Microsoft Word Doc...	3/25/2002 7:13 PM
P-Fig. 5.vsd	18 KB	VSD File	2/24/2002 5:29 PM
P-Figures4435.pdf	493 KB	Adobe Acrobat 7.0 ...	12/30/2001 2:13 AM
P-intubation3.doc	55 KB	Microsoft Word Doc...	4/15/2002 3:19 AM
P-intubation3CP1.doc	64 KB	Microsoft Word Doc...	4/21/2002 2:41 AM
P-intubation3rbcomment.doc	54 KB	Microsoft Word Doc...	4/17/2002 6:25 PM
P-intubation6.doc	38 KB	Microsoft Word Doc...	5/5/2002 4:54 PM
P-intubationrb.doc	40 KB	Microsoft Word Doc...	5/9/2002 8:44 AM
P-intubation-draft1.doc	40 KB	Microsoft Word Doc...	2/17/2002 6:09 AM
P-intubation-draft1withcommentrb.doc	63 KB	Microsoft Word Doc...	2/18/2002 9:46 PM
P-p4438-4.doc	92 KB	Microsoft Word Doc...	12/25/2001 4:24 PM
P-P-2394P.doc	53 KB	Microsoft Word Doc...	1/15/2002 7:11 AM
P-P-2781-4.doc	77 KB	Microsoft Word Doc...	12/19/2001 5:27 AM
P-P-2981-duplma.doc	47 KB	Microsoft Word Doc...	4/23/2002 7:22 AM
P-P-2981-us amend.doc	51 KB	Microsoft Word Doc...	5/1/2002 12:42 AM
P-P-4160HUSP rcorrect.doc	49 KB	Microsoft Word Doc...	4/23/2002 6:57 PM
P-P-4109-USPdraft.doc	45 KB	Microsoft Word Doc...	5/1/2002 1:25 AM
P-P-4109-USPv1.doc	52 KB	Microsoft Word Doc...	2/17/2002 7:11 AM
P-P-4435-USPv2.doc	76 KB	Microsoft Word Doc...	12/30/2001 2:12 AM
P-P-4435-USPv2rbcomment.doc	75 KB	Microsoft Word Doc...	12/30/2001 5:22 AM
P-p-4438-4.doc	65 KB	Microsoft Word Doc...	12/30/2001 7:23 AM
P-p-4438-4commentrb.doc	81 KB	Microsoft Word Doc...	12/30/2001 8:42 AM
P-P-4783-Prv(rick).doc	51 KB	Microsoft Word Doc...	1/3/2002 7:10 AM
P-P-4783-v1(rick).doc	41 KB	Microsoft Word Doc...	1/2/2002 8:24 AM
P-P-4783-v1.doc	48 KB	Microsoft Word Doc...	5/7/2002 6:18 AM
P-P-4948-USP.doc	40 KB	Microsoft Word Doc...	4/13/2002 6:51 PM
P-P-4948-USPbcomment.doc	38 KB	Microsoft Word Doc...	4/16/2002 5:03 AM
P-P-4948-USPbcommentrept.doc	37 KB	Microsoft Word Doc...	5/1/2002 1:34 AM
P-patent-437001 acoustic+structureanalyzer.doc	102 KB	Microsoft Word Doc...	4/11/2002 10:07 AM
P-ResOA-2038.doc	108 KB	Microsoft Word Doc...	1/7/2002 4:43 AM

EXHIBIT A

INTUBATION TOOL HAVING AN IMAGING UNIT

FIELD OF THE INVENTION

The present invention relates to the field of medical devices, more specifically to a combination of endotracheal intubation device such as laryngoscope and an imaging unit operates in-vivo.

BACKGROUND OF THE INVENTION

Endotracheal intubation is a very common medical procedure mainly directed to open a closed larynx by inserting laryngoscope through the larynx following by the insertion of endotracheal tube thus enabling air supply to the patient. Endotracheal intubation is a life saving procedure performed in emergency cases thus the ability to intubate a patient rapidly is highly important.

In many patients, intubation is particularly hard to perform due to morphological anomalies, such as a large tongue, excessive soft tissue, or tracheal displacement. These morphological anomalies make it difficult to visualize the posterior pharyngeal area, larynx and cords, thus cause difficulties in intubation. In emergency medical situations, attempts to intubate such persons is difficult, time consuming, and often meets with failure.

To overcome this problem intubation devices including illumination and visualizing means for illuminating and visualizing the pharynx, larynx, trachea and associated structures during intubation were developed.

U.S. Pat. No. 4,982,729 and 5,261,392, issued to Wu, discloses a laryngoscope comprising a blade and an integral handle having an enclosed cavity which receives a fiberoptic bundle having illuminating and viewing fibers. An eyepiece is connected to view the image from the viewing fiberoptic bundle.

U.S. Pat. No. 5,363,838 issued to George, directed to an intubating scope with an auxiliary fiber optic camera connected to an external electronic

viewing screen. The intubating scope is disposed within an endotracheal tube, which is inserted into the airway after a laryngoscope blade has been inserted and used to open the airway. Accordingly, the fiber optic scope is useful for guiding the endotracheal tube further into the larynx and trachea after a laryngoscope has been inserted and utilized to open the airway.

U.S. Pat. No. 4,901,708, issued to Lee, discloses a viewing laryngoscope comprising a blade having a pair of fiberoptic bundles. One bundle transmits light to the distal end of the blade, and the other bundle is optically coupled to a lens for viewing of the area adjacent the distal end of the blade. The device does not enable remote simultaneous viewing of the airway during insertion of the blade.

U.S. Pat. No. 6,123,666 issued to Wrenn, discloses a laryngoscope equipped with a fiberoptic scope for enabling simultaneous remote observation of the airway and associated structures during insertion of the laryngoscope blade. The laryngoscope includes a blade member configured for attachment to a handle, a conduit positioned adjacent the blade member for housing a fiberoptic scope. The fiberoptic scope includes fibers for illuminating an area adjacent a distal end of the blade and viewing fibers for transmitting a visual image of the illuminated area to a remote viewing system.

SUMMARY OF THE INVENTION

To be completed after claims is finalized.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood and appreciated more fully from the following detailed description taken in conjunction with the drawings in which:

Figure 1 is a schematic illustration of the intubation device in accordance with an embodiment of the invention; and

Figure 2 is a schematic illustration of the imaging unit in accordance with an embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

In the following description, various aspects of the present invention will be described. For purposes of explanation, specific configurations and details are set forth in order to provide a thorough understanding of the present invention. However, it will also be apparent to one skilled in the art that the present invention may be practiced without the specific details presented herein. Furthermore, well known features may be omitted or simplified in order not to obscure the present invention.

Embodiments of the present invention relate to endotracheal intubation device such as a laryngoscope, comprising a wireless disposable imaging unit allowing in vivo continuous visualization during the insertion of the laryngoscope and the endotracheal tube.

A schematic illustration of the device, in accordance with an embodiment of the invention, is presented in Fig. 1. The endotracheal intubation device 10 comprises a laryngoscope 20, an imaging unit 30 attached to laryngoscope 20 and a display unit 50. Laryngoscope 20 comprises a blade 22 having a proximal end 23, a distal end 21 and a handle 24 which is preferably attached to the proximal end 23 of laryngoscope 20. Laryngoscope 20 may be of any kind existing including, for example, laryngoscope comprising a tube for air passage or for insertion of tools.

The operation of the laryngoscope 20 may be viewed by the images captured in vivo by imaging unit 30. Imaging unit 30 is preferably located near or at the distal end 21 of blade 22, such that the internal organ at the site of operation may be imaged and viewed in display system 50, simultaneously in the real time operation of laryngoscope 20.

Reference is now made to Figure 2 which is an illustration of the in-vivo imaging unit 30. Imaging unit 30 may be disposable thus prevents the need of sterilization between uses and wireless thus enable comfortable and flexible use. The imaging unit 30 preferably comprises an imager 34 (preferably a CMOS camera) and an illumination source 36 (preferably white LEDs), both situated behind a dome shaped optical window 31. The imaging unit further comprises a transmitter 33 and an antenna 35 that transmit signals from the imager 34 to the display system 50 and a power supplier 37 (preferably a silver

oxide battery), for supplying the electric power required for the operation of the imaging unit 30. Other imaging units may be used.

Imager 34 may be for example a CCD, an active or passive CMOS imaging chip and may generate digital or analog signals. Preferably, imager 34 is a single chip imager similar to the CMOS image sensor (Camera on Chip) designed by Photobit Inc. of California, USA, with integrated active pixel and post pixel circuitry. The imaging unit may be similar to that described in WO 00/76391 or the imaging unit described in US Patent Number 5,604,531 both of which are assigned to the common assignee of the present invention and both of which are hereby incorporated by reference, or as described in US application number 09/800,470, which is attached herein as Appendix A; other imaging units may be used.

It will be appreciated that a plurality of CMOS imaging cameras may be used in the device and system of the invention. Each CMOS imaging camera may include its own optical system and either one or more illumination sources, in accordance with specific requirements of the device or system.

Both CMOS imager and LED are low power components such that they may be powered by a battery thus do not require wire connection to a power supply system. In one embodiment the battery may be incorporated within imaging unit 30 at the distal end 21 of laryngoscope blade 22.

In one embodiment imaging unit 30 is a one part imaging unit as described hereinabove. In alternate embodiment imaging unit 30 is a two part imaging unit wherein the first part situated at the distal end of blade 22 and the second part situated at the handle. The first and the second parts are connected via electric wires. The first part of the two part imaging unit comprises imager 34 (preferably a CMOS camera) and illumination source 36 (preferably white LEDs) both situated behind a dome shaped optical window 31. The second part comprises a transmitter 33 and an antenna 35 that transmit signals from the imager 34 to an external receiving system and a power supplier 37 (preferably a silver oxide battery). This embodiment allows further miniaturizing of the first part of imaging unit 30 located at the distal end of blade 22.

Display unit 50, located outside of the patient body, comprises a receiver, a processor and a screen. The display unit 50 receives signals from imager 34 located in imaging unit 30 and process the signals to an image output

displayed on a screen. The display unit 50 preferably comprises a receiver 52 to receive the signals, a processor 54 which is preferably a computer, for processing the received signals and a screen 56, which is preferably a computer screen, for enabling the view of the images. The display unit 50 is typically located outside the patient body while the imaging unit 30 is typically located in-vivo, and transmitting the signals to the display unit.

Transmission of signals from the CMOS imager 34 may be effected wireless, using various digital or analog modulation techniques. For example transmission of a digital image over a radio channel may use an FSK (Frequency Shift Keying) modulation technique.

A wireless communication is exist between imaging unit 30 and an external power supply system and between imaging unit 30 and the display system 50 thus allowing a convenient and flexible maneuvering of endotracheal intubation device 10 with simultaneous in-vivo viewing.

Further, the device has the benefit of performing endotracheal intubation procedures while viewing the patient in-vivo, in the field. This is particularly intended for emergency cases such as obstructed airway where an intubation procedure is required.

Embodiment of an endotracheal intubation device 10 for the emergency treatment in field includes endotracheal intubation device 10, imaging unit 30, and display system 50. The display system 50 comprises the receiver 52 and a processor 54 which is preferably a portable computer (e.g., a PC or palm-top computer) thus, preferably allow the processing of the information and the viewing of the in-vivo images without a connection to an external power supply system.

It will be appreciated by persons skilled in the art that the present invention is not limited to what has been particularly shown and described hereinabove. Alternate embodiments are contemplated which fall within the scope of the invention.

CLAIMS

1. Apparatus for performing intubation procedure comprising:
 - a laryngoscope;
 - a one part imaging unit wherein said one part imaging unit attached to laryngoscope for enabling imaging a site in-vivo; and
 - a display system for receiving signals from said one part imaging unit and process the signals to an image output.
2. The apparatus of claim 1 wherein said laryngoscope comprises of a handle and a blade wherein said blade having a distal end and a proximal end.
3. The apparatus of claim 2 wherein said handle is attached to the proximal end of said blade.
4. The apparatus of claim 1 wherein said imaging unit is one part imaging unit comprising:
 - an imaging camera;
 - at least one illumination source for illuminating a site in vivo;
 - an optical system for imaging the site in vivo onto the imaging camera;
 - a battery; and
 - a transmitter for transmitting video output of the imaging camera.
5. The apparatus of claim 4 wherein said imaging camera includes at least a CMOS camera.
6. The apparatus of claim 4 wherein said illumination source includes at least a white LED.
7. The apparatus of claim 4 wherein said optical system comprises an aspherical focussing lens.
8. The apparatus of claim 4 wherein said CMOS imaging camera transmit said video output wirelessly to said receiving system.

9. The apparatus of claim 4 wherein said transmitter transmits the image over a radio channel using a frequency shift keying modulation technique.
10. The apparatus of claim 1 wherein said receiving system is located outside a patient.
11. The apparatus of claim 1 wherein said display system comprises a receiver for receiving images from said imaging unit and a processor for processing said images received in said receiver and a screen for viewing the processed images.
12. The display system of claim 11 wherein said receiver and said processor are constructed as one unit wherein said receiver is incorporated in said processor.
13. The receiving system of claim 11 wherein said receiver and said processor are constructed as two separate parts connected by a wire.
14. The apparatus of claim 4 wherein said one part imaging unit attached to said laryngoscope.
15. The apparatus of claim 4 wherein said one part imaging unit attached to the distal end of said laryngoscope blade.
16. Apparatus for performing intubation procedure comprising:
 - a laryngoscope;
 - a two part imaging unit wherein said two part imaging unit attached to laryngoscope for enabling imaging a site in-vivo; and
 - a display system for receiving signals from said two part imaging unit and process the signals to an image output
17. The apparatus of claim 16 wherein said two part imaging unit is a having a first and a second part wherein said first part comprising:
 - an imaging camera;
 - at least one illumination source for illuminating a site in vivo; and

an optical system for imaging the site in vivo onto the imaging camera;

and a second part comprising:

a battery; and

a transmitter for transmitting video output of the imaging camera.

18. The apparatus of claim 17 wherein said first part attached to the distal end of said laryngoscope blade.

19. The apparatus of claim 7 wherein said second part attached to said laryngoscope handle.

20. The apparatus of claim 7 wherein said first part and said second part are connected via electric wires.

~~10.21.~~ The apparatus of claim 17 wherein said imaging camera includes at least a CMOS camera.

~~11.22.~~ The apparatus of claim 17 wherein said illumination source includes at least a white LED.

~~12.23.~~ The apparatus of claim 17 wherein said optical system comprises an aspherical focussing lens.

~~13.24.~~ The apparatus of claim 17 wherein said CMOS imaging camera transmit said video output wirelessly to said receiving system.

~~14.25.~~ The apparatus of claim 17 wherein said transmitter transmits the image over a radio channel using a frequency shift keying modulation technique.

~~15.26.~~ The apparatus of claim 17 wherein said receiving system is located outside a patient.

~~16.27.~~ The apparatus of claim 17 wherein said receiving system comprises a receiver for receiving images from said imaging unit and a processor for processing said images received in said receiver and allow a view of the processed images.

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17.28. The receiving system of claim 27 wherein said receiver and said processor are constructed as one unit wherein said receiver is incorporated in said processor.

18.29. The receiving system of claim 27 wherein said receiver and said processor are constructed as two separate parts connected by a wire.

30. A method for performing in-vivo intubation procedures comprising the steps of:

inserting a laryngoscope and an imaging unit attached to said laryngoscope;

obtaining images of the site in-vivo;

maneuvering the laryngoscope according to the obtained images.

2002 GIVEN IMAGING PATENT APPLICATIONS

NO.	Country	Application No.	Filing Date	Title / catchword
1	US	10/036,490	07-01-2002	A SYSTEM AND METHOD FOR DETERMINING THE PRESENCE OF A SUBSTANCES IN-VIVO
2	EP	02715685.0	11-01-2002	DEVICE AND SYSTEM FOR IN-VIVO PROCEDURES - EMERGENCY KIT IN A SUITCASE
3	IL	156876	11-01-2002	DEVICE AND SYSTEM FOR IN-VIVO PROCEDURES - EMERGENCY KIT IN A SUITCASE
4	PC	PCT/IL2002/00026	11-01-2002	EMERGENCY KIT IN A SUITCASE
5	EP	00937157.6	15-01-2002	AN OPTICAL SYSTEM
6	DE	60225669.0-08	16-01-2002	SAMPLING CAPSULE
7	FR	2715698.3	16-01-2002	SAMPLING CAPSULE
8	GB	2715698.3	16-01-2002	SAMPLING CAPSULE
9	IT	2715698.3	16-01-2002	SAMPLING CAPSULE
10	PC	PCT/IL2002/00041	16-01-2002	SAMPLING CAPSULE
11	PC	PCT/IL2002/00042	16-01-2002	MULTIPLE IMAGERS
12	US	10/046,540	16-01-2002	A SYSTEM AND METHOD FOR DETERMINING IN VIVO BODY LUMEN CONDITIONS
13	US	10/046,541	16-01-2002	DOUBLE HEADED CAPSULE
14	IL	147789	23-01-2002	DEVICE AND METHOD FOR POSITIONING AN OBJECT IN A BODY LUMEN
15	US	11/244,037	11-02-2002	SELF PROPELLED DEVICE - NON PROTRUDING PROPULSION
16	USP	60/354,925	11-02-2002	NON PROTRUDING PROPULSION
17	USP	60/354,926	11-02-2002	MHDP CAPSULE
18	JP	2006-160094	12-02-2002	SYSTEM AND METHOD FOR DISPLAYING AN IMAGE STREAM - STABILIZING IMAGE
19	US	10/610,915	12-02-2002	SYSTEM AND METHOD FOR DISPLAYING AN IMAGE STREAM - MULTIVIEW - FUSED IMAGES
20	US	12/323,620	12-02-2002	MULTI VIEW
21	US	11/321,456	12-02-2002	SYSTEM AND METHOD FOR DISPLAYING AN IMAGE STREAM - NEW MULTIVIEW
22	USP	60/355,796	12-02-2002	MULTIVIEW
23	USP	60/356,168	14-02-2002	ULTRASONIC CAPSULE
24	AU	2006-230707	16-02-2002	SAMPLING CAPSULE
25	PC	PCT/IL2002/00210	14-03-2002	BLOOD DETECTION
26	US	10/097,096	14-03-2002	METHOD AND SYSTEM FOR DETECTING COLORIMETRIC ABNORMALITIES IN VIVO
27	EP	02718493.6	26-03-2002	A METHOD FOR TIMING CONTROL
28	IL	154421	26-03-2002	A METHOD FOR TIMING CONTROL
29	JP	2002-578664	26-03-2002	A METHOD FOR TIMING CONTROL
30	PC	PCT/IL2002/00253	26-03-2002	PHOTONIC MEMORY
31	US	10/106,817	26-03-2002	A METHOD FOR TIMING CONTROL
32	PC	PCT/IL2002/00283	04-04-2002	NO POWER CAPSULE
33	US	10/115,585	04-04-2002	NO POWER CAPSULE
34	USP	60/375,006	25-04-2002	CHANGING GEOMETRY
35	USP	60/378,684	09-05-2002	LIQUID CRYSTAL TEMPERATURE SENSING
36	JP	2001-537612	14-05-2002	METHOD FOR ACTIVATING AN IMAGE COLLECTING PROCESS

EXHIBIT C

NO.	Country	Application No.	Filing Date	Title / catchword
37	USP	60/379,752	14-05-2002	AN INTEGRATED OPTICAL HEAD
38	USP	60/379,735	14-05-2002	AN OPTICAL HEAD ASSEMBLY
39	JP	2002-139587	15-05-2002	ARRAY SYSTEM AND METHOD FOR LOCATING AN IN VIVO SIGNAL SOURCE
40	US	10/130,326	15-05-2002	METHOD FOR ACTIVATING AN IMAGE COLLECTING PROCESS
41	USP	60/380,258	15-05-2002	COLORIMETRIC DIAGNOSIS
42	DE	DE60234662A	17-05-2002	ARRAY SYSTEM AND METHOD FOR LOCATING
43	EP	02010270.3	17-05-2002	ARRAY SYSTEM AND METHOD FOR LOCATING AN IN VIVO SIGNAL SOURCE
44	PC	PCT/IL2002/00386	19-05-2002	MOTILITY ANALYSIS WITHIN A GASTROINTESTINAL TRACT
45	EP	02733196.6	20-05-2002	A FLOATABLE IN VIVO SENSING DEVICE
46	IL	158972	20-05-2002	A FLOATABLE IN VIVO SENSING DEVICE
47	JP	2002-591779	20-05-2002	A FLOATABLE IN VIVO SENSING DEVICE
48	PC	PCT/IL2002/00391	20-05-2002	AIRLESS ENDOSCOPY
49	PC	PCT/IL2002/00392	20-05-2002	A FLOATABLE IN VIVO SENSING DEVICE
50	US	10/150,018	20-05-2002	TRACKING & LOCALIZATION OF CAPSULE
51	US	10/150,019	20-05-2002	THUMBNAILS
52	US	10/150,492	20-05-2002	FLOATABLE IN VIVO SENSING DEVICE AND METHOD FOR USE
53	IL	150167	11-06-2002	METHOD FOR IN VIVO SENSING
54	US	10/166,025	11-06-2002	DEVICE AND METHOD FOR MOVING AN IN VIVO SENSING DE
55	PC	PCT/IL2002/00480	18-06-2002	RIGID FLEX
56	US	10/175,148	20-06-2002	MOTILITY ANALYSIS WITHIN A GASTROINTESTINAL TRACT
57	EP	02743598.1	27-06-2002	IN VIVO IMAGING DEVICE WITH A SMALL CROSS SECTIONAL
58	IL	159616	27-06-2002	IN VIVO IMAGING DEVICE WITH A SMALL CROSS SECTIONAL AREA
59	JP	2003-509753	27-06-2002	IN VIVO IMAGING DEVICE WITH A SMALL CROSS SECTIONAL AREA
60	PC	PCT/IL2002/00526	27-06-2002	SMALL CROSS-SECTION CMOS CONFIGURATION
61	US	10/482,218	27-06-2002	SMALL CROSS-SECTION CMOS CONFIGURATION
62	USP	60/392,300	01-07-2002	TOILET SEAT DETECTOR
63	IL	150575	03-07-2002	DEVICE AND METHOD FOR ATTENUATING RADIATION FROM IN VIVO ELECTRICAL DEVICES SHIELDING BELT
64	US	10/187,795	03-07-2002	DEVICE AND METHOD FOR ATTENUATING RADIATION FROM IN VIVO ELECTRICAL DEVICES
65	USP	60/393,300	03-07-2002	PRESSURE SENSING CAPSULE
66	AU	2008-202321	11-07-2002	PATENCY
67	PC	PCT/IL2002/00562	11-07-2002	PATENCY
68	US	10/192,861	11-07-2002	PATENCY
69	IL	150810	18-07-2002	A SYSTEM FOR DETECTING SUBSTANCES
70	IL	150880	23-07-2002	SYSTEM AND METHOD FOR CHANGING TRANSMISSION FROM AN IN VIVO SENSING DEVICE
71	US	10/200,548	23-07-2002	STRENGTH IMAGING DEVICE TRANSMISSION
72	US	10/202,608	25-07-2002	AUTOMATIC LIGHT CONTROL
73	US	10/202,626	25-07-2002	DIAGNOSTIC DEVICE USING DATA COMPRESSION
74	DEU	20221435.4	26-07-2002	AUTOMATIC LIGHT CONTROL

NO.	Country	Application No.	Filing Date	Title / catchword
75	DEU	20221437.0	26-07-2002	AUTOMATIC LIGHT CONTROL
76	DEU	20221436.2	26-07-2002	AUTOMATIC LIGHT CONTROL
77	JP	2006-111735	26-07-2002	AUTOMATIC LIGHT CONTROL
78	PC	PCT/IL2002/00622	26-07-2002	AUTOMATIC LIGHT CONTROL
79	PC	PCT/IL2002/00621	26-07-2002	DIAGNOSTIC DEVICE USING DATA COMPRESSION
80	IL	151049	01-08-2002	SEQUENTIAL RGB ILLUMINATION
81	IL	160179	01-08-2002	APPARATUS AND METHODS FOR IN VIVO IMAGING - DEPTH OF FOCUS
82	PC	PCT/IL2002/00634	01-08-2002	DEPTH OF FOCUS
83	US	10/208,832	01-08-2002	SEQUENTIAL RGB ILLUMINATION
84	US	10/485,620	01-08-2002	APPARATUS AND METHODS FOR IN VIVO IMAGING - DEPTH OF FOCUS
85	JP	2002-229001	06-08-2002	SYSTEM AND METHOD FOR MANEUVERING A DEVICE IN VIVO
86	US	10/212,139	06-08-2002	MANEUVERING A DEVICE IN VIVO
87	US	10/213,345	07-08-2002	MANEUVERABLE, DEFLECTABLE DEVICE
88	JP	2003-516344	08-08-2002	APPARATUS AND METHODS FOR IN VIVO IMAGING- DEPTH OF FOCUS
89	USP	60/402,703	13-08-2002	AGGLUTINATION
90	US	10/218,164	14-08-2002	ELECTRICAL IMPEDANCE
91	EP	01901353.1	19-08-2002	SYSTEM AND METHOD FOR DETERMINING THE PRESENCE OF A SUBSTANCE IN -VIVO
92	PC	PCT/IL2002/00739	05-09-2002	THREE DIMENSIONAL DISPLAY OF BODY LUMENS
93	US	10/234,141	05-09-2002	THREE DIMENSIONAL DISPLAY OF BODY LUMENS
94	JP	2001-564653	06-09-2002	A DEVICE AND SYSTEM FOR IN VIVO IMAGING
95	KR	2002-7011833	09-09-2002	CMOS CAPSULE
96	US	10/241,773	12-09-2002	VIDEO CAPSULE ADMINISTRATION
97	AU	2001-41004	19-09-2002	A DEVICE AND SYSTEM FOR IN VIVO IMAGING
98	PC	PCT/IL2002/00784	24-09-2002	CONTROLLABLE CAPSULE
99	US	10/252,826	24-09-2002	SYSTEM AND METHOD FOR CONTROLLING A DEVICE IN VIVO - CONTROLLABLE CAPSULE
100	TW	091122442	27-09-2002	CMOS CAPSULE
101	USP	60/414,339	30-09-2002	CAPSULE WITHIN A SPHERE
102	USP	60/414,414	30-09-2002	PREEMIE
103	USP	60/414,338	30-09-2002	MULTI-SECTIONAL OPTICAL DOME
104	CN	01807801	08-10-2002	A DEVICE AND SYSTEM FOR IN VIVO IMAGING
105	EP	01912088.0	08-10-2002	A DEVICE AND SYSTEM FOR IN VIVO IMAGING
106	USP	60/418,162	15-10-2002	ENERGY TRANSFER TO CAPSULE
107	USP	60/419,558	21-10-2002	INTUBATION TOOL
108	USP	60/421,788	29-10-2002	IN-VIVO EXTENDABLE ELEMENT
109	USP	60/422,113	30-10-2002	ONE TIME CAPSULE
110	USP	60/422,483	31-10-2002	DETECTION OF H.PYLORI
111	PC	PCT/IL2002/00659	08-11-2002	INTRA VASCULAR IMAGING- ADLER
112	JP	2001-583841	14-11-2002	SYSTEM FOR CONTROLLING IN VIVO CAMERA CAPTURE

NO.	Country	Application No.	Filing Date	Title / catchword
113	USP	60/427,226	19-11-2002	STRESS/PRESSURE SENSING
114	EP	01929965.0	27-11-2002	SYSTEM FOR CONTROLLING IN VIVO CAMERA CAPTURE AND DISPLAY RATE
115	USP	60/429,378	27-11-2002	FIBERPLATE
116	USP	60/429,564	29-11-2002	CHROMOENDOSCOPY
117	USP	60/429,562	29-11-2002	SENSOR INDICATION BY LIGHT
118	USP	60/433,586	16-12-2002	TRIGGERED CAPSULE
119	EP	02028130.9	17-12-2002	ALTERNATING ILLUMINATION
120	IL	153510	17-12-2002	DEVICE, SYSTEM AND METHOD FOR CAPTURING IN-VIVO IMAGES WITH THREE-DIMENSIONAL ASPECTS
121	US	10/320,722	17-12-2002	DEVICE, SYSTEM AND METHOD FOR CAPTURING IN-VIVO IM
122	USP	60/433,765	17-12-2002	SIZE ANALYSIS
123	JP	2002-366920	18-12-2002	DEVICE, SYSTEM AND METHOD FOR CAPTURING IN-VIVO IM
124	PC	PCT/IL2002/01025	19-12-2002	IMAGE BASED SIZE ANALYSIS
125	US1	10/322,772	19-12-2002	ENDOSCOPIC RELEASING DEVICE AND METHOD
126	USP1	60/435,363	23-12-2002	PART 2- REVERSIBLE PRESSURE DETECTOR
127	USP	60/436,004	26-12-2002	SPHERICAL CAPSULE
128	USP	60/436,003	26-12-2002	IMMOBILIZABLE IN VIVO SENSING DEVICE
129	USP	60/436,651	30-12-2002	PATIENT POSITIONING
130	USP	60/436,652	30-12-2002	CAPSULE MOTION DETECTION